

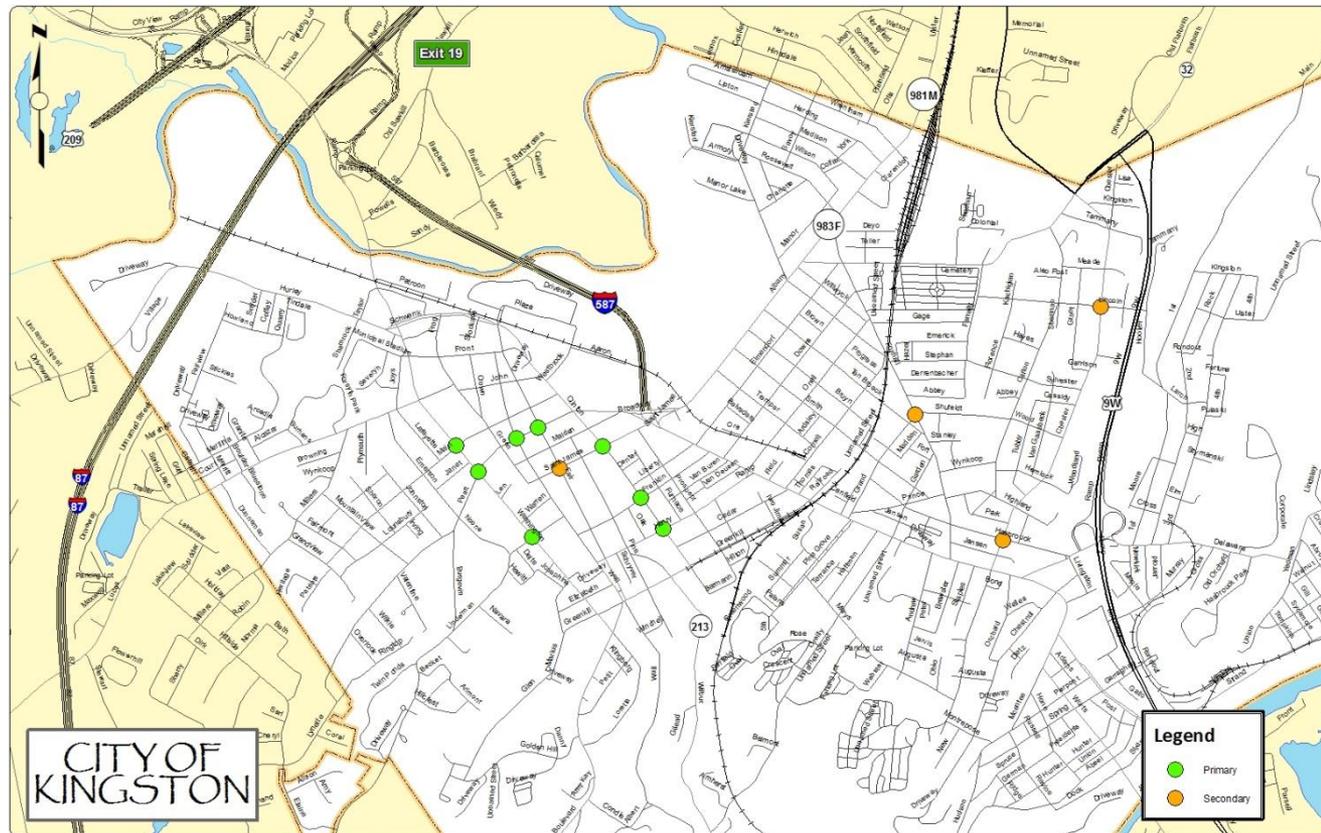


Public Meeting

Traffic Signal

Warrant Evaluation

City of Kingston



November 19, 2019

Purpose of Tonight's Public Meeting?

- Introduce study
- Hear concerns and ideas
- Obtain input on preliminary Alternatives



Project Understanding/Objectives

- Provide a uniform and objective approach
- Evaluate Existing and Future Conditions
- Identify traffic signals that do not meet traffic and safety warrants
- Provide safe, efficient, and reliable traffic mobility



Project Objective

- Evaluate the **effectiveness of traffic signals** at several intersections identified by the City of Kingston that may not meet the **minimum traffic and safety warrants** to justify their continued operation.

Signal Removal – Frequently Asked Questions

- Why would conditions change that would warrant the removal of traffic signals?
 - Lack of traffic engineering expertise
 - Demographic change in the area
 - Altered traffic patterns
 - Updated warrants that are based on a more modern understanding of traffic operation

Signal Removal – Frequently Asked Questions

- What are the disadvantages of maintaining unwarranted traffic signals?
 - Create unnecessary intersection delay
 - Operational and maintenance costs (\$5,500 per year)
 - Reroute traffic to less-appropriate roads
 - Promote disrespect for traffic control devices
 - Result in higher crash rates
 - Unavailable replacement parts
 - Air quality issues associated with idling traffic



Technical Advisory Committee (TAC)

- UCTC
- City of Kingston Engineer
- City of Kingston DPW Superintendent
- City of Kingston Director of Communications/
Engagement
- FHWA Transportation Safety Engineer



Project History/Schedule

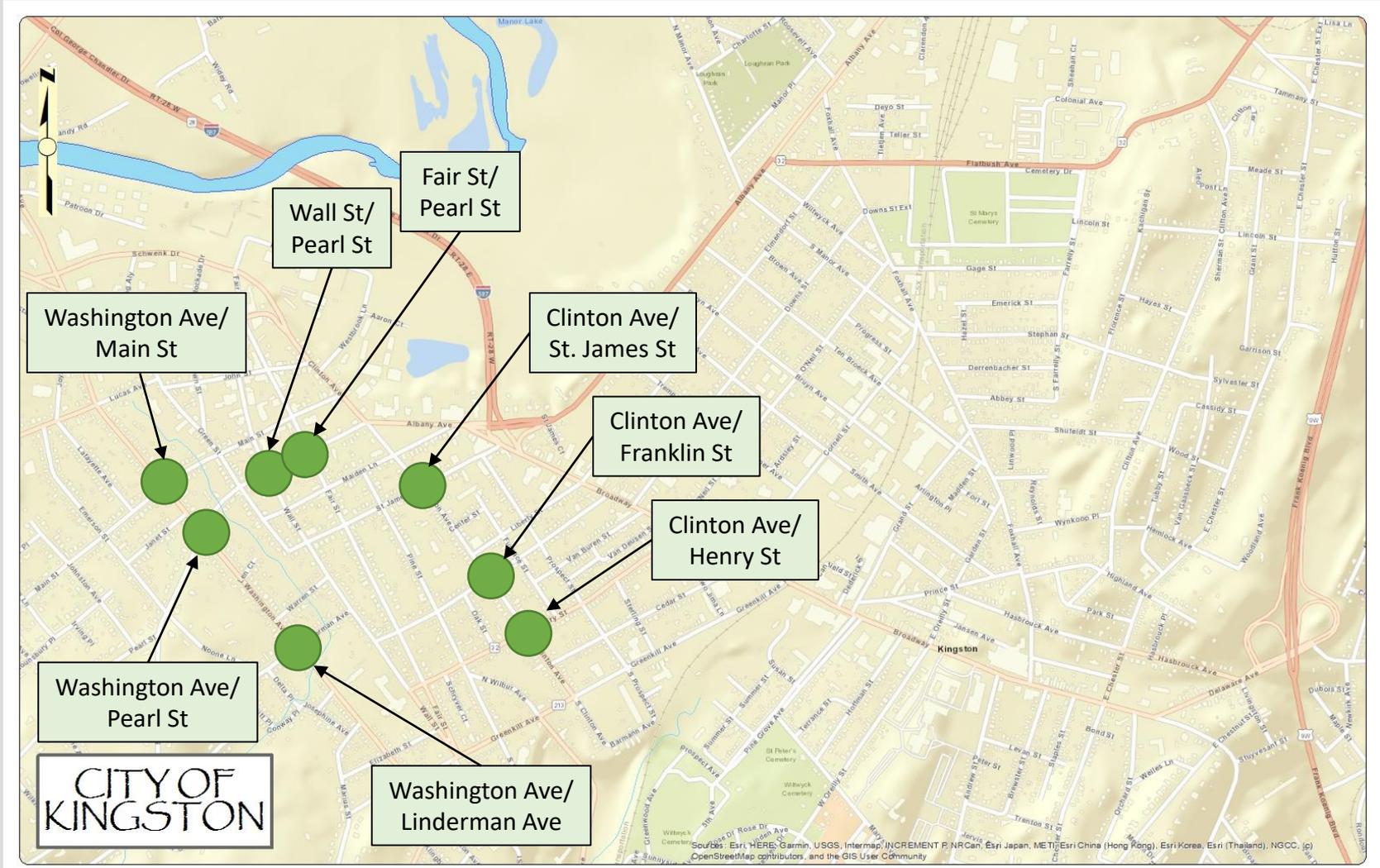
- ✓ Project awarded – August 2018
- ✓ Bi-Weekly progress updates and monthly conference calls scheduled
- ✓ TAC Meeting #1 – September 12, 2018
 - ✓ Project on hold due to construction by CHGE in City of Kingston – October 2018
- ✓ Project Restart – May 2019
- ✓ TAC Meeting #2 – October 4, 2019
- ✓ Kingston Public Safety Meeting – October 23, 2019
- Public Meeting – November 19, 2019
- Respond to public comments – December 2019
- Finalize Report – January/February 2020



Study Area

- 8 Primary Study Intersections
 - Detailed assessment
 - Washington Avenue/Linderman Avenue (Pre-Timed Signal)
 - Washington Avenue/Pearl Street (Pre-Timed Signal)
 - Washington Avenue/Main Street (Signal set to Flash)
 - Wall Street/Pearl Street (Pre-Timed Signal)
 - Fair Street/Pearl Street (Pre-Timed Signal)
 - Clinton Avenue/St. James Street (Signal set to Flash)
 - Clinton Avenue/Franklin Street (Signal set to Flash)
 - Clinton Avenue/Henry Street (Signal set to Flash)

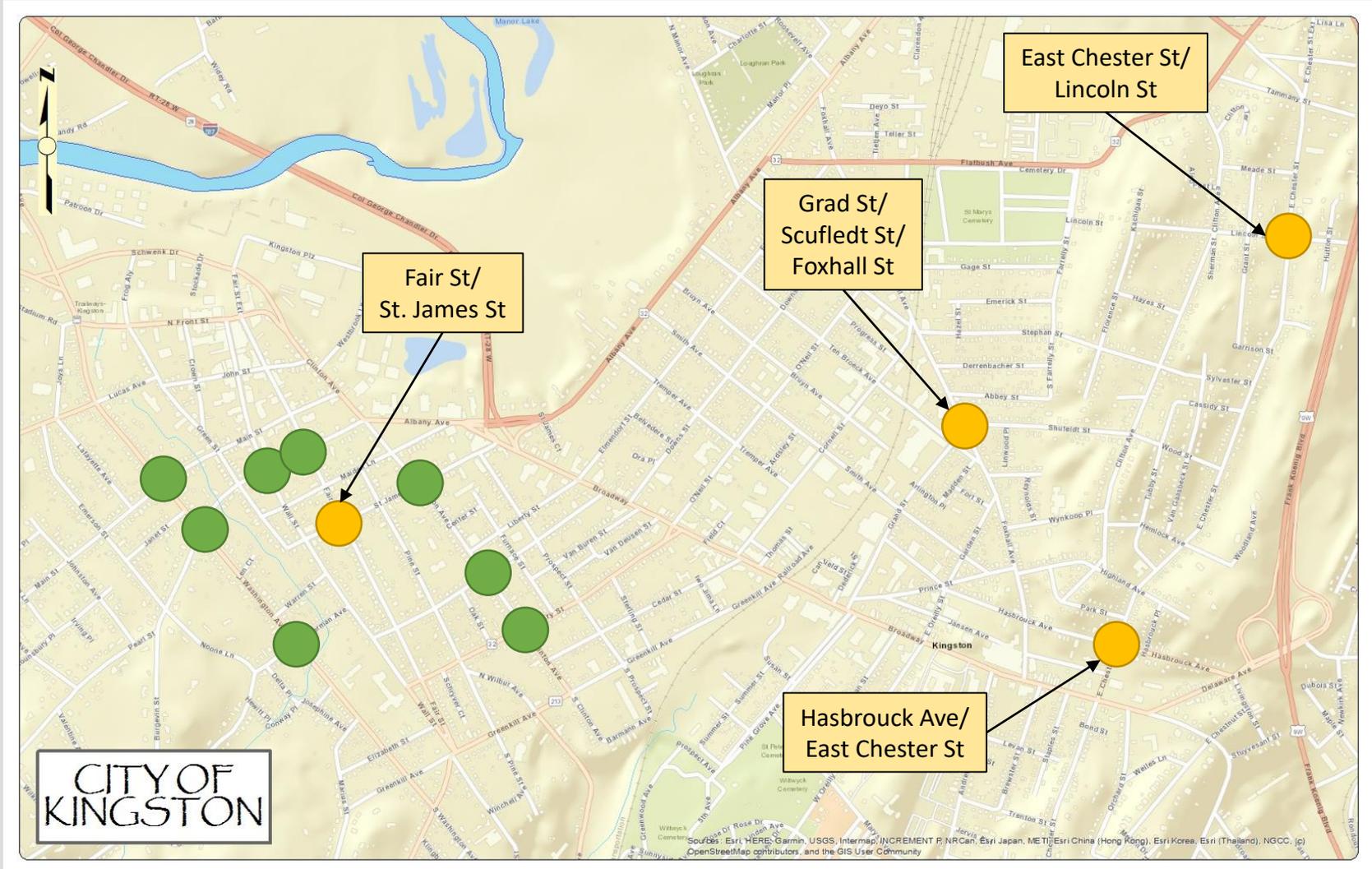
Study Area – 8 Primary Intersections



Study Area

- 4 Secondary Study Intersections
 - Preliminary assessment completed
 - Hasbrouck Avenue/E. Chester Street
 - Grand Street/Scufeldt Street/Foxhall Avenue
 - East Chester Street/Lincoln Street
 - Fair Street/St James Street

Study Area – 4 Secondary Intersections



Existing Conditions

- Automatic Traffic Recorder (ATR) Review
 - Segment evaluation
 - Speed assessment (85th% speed = 20 to 30-mph)
 - Daily traffic volumes (identify peak time period)



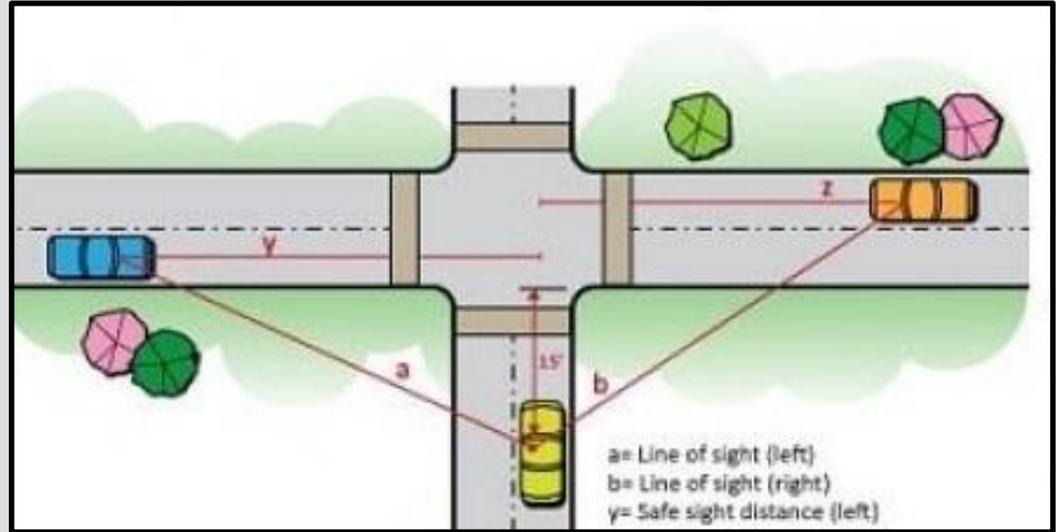
Existing Conditions

- Turning Movement Count (TMC) Review
 - Record video of all 12 intersections
 - Intersection counts from 7:00 a.m. to 7:00 p.m. (12 hours)
 - Passenger cars, trucks, buses, bikes, pedestrians



Existing Conditions

- Signal Timing
- Pedestrian Accommodations
- Available Sight Distance
- Site Photos



Existing Conditions – Crash Summary

Intersection	Collision Type												Crash Rate (ACC/MEV)
	Backing	Right Turn	Left-Turn	Rear-End	Overtaking	Right-Angle	Fixed Object	Parked Car	Pedestrian	Bicycle	Unknown	Total	
Washington Ave/Linderman Ave	0	0	1	1	1	2	1	0	0	0	0	6	0.69
Washington Ave/Pearl St	0	0	0	1	1	0	0	0	0	0	0	2	0.17
Washington Ave/Main St	0	0	0	2	0	0	0	3	0	0	1	6	0.52
Wall St/Pearl St	0	0	1	6	0	1	0	0	0	0	0	8	1.00
Fair St/Pearl St	2	1	1	1	1	0	0	3	1	0	0	10	1.31
Clinton Ave/St. James St	0	0	1	1	0	2	0	0	0	1	0	5	0.83
Clinton Ave/Franklin St	0	0	0	1	1	0	0	1	0	2	0	5	0.80
Clinton Ave/Henry St	0	0	1	0	0	2	0	0	0	0	1	4	0.60
Total	2	1	5	13	4	7	1	7	1	3	2	46	

- Statewide Average Rate = 0.52 MEV

Existing Conditions – Accident Summary

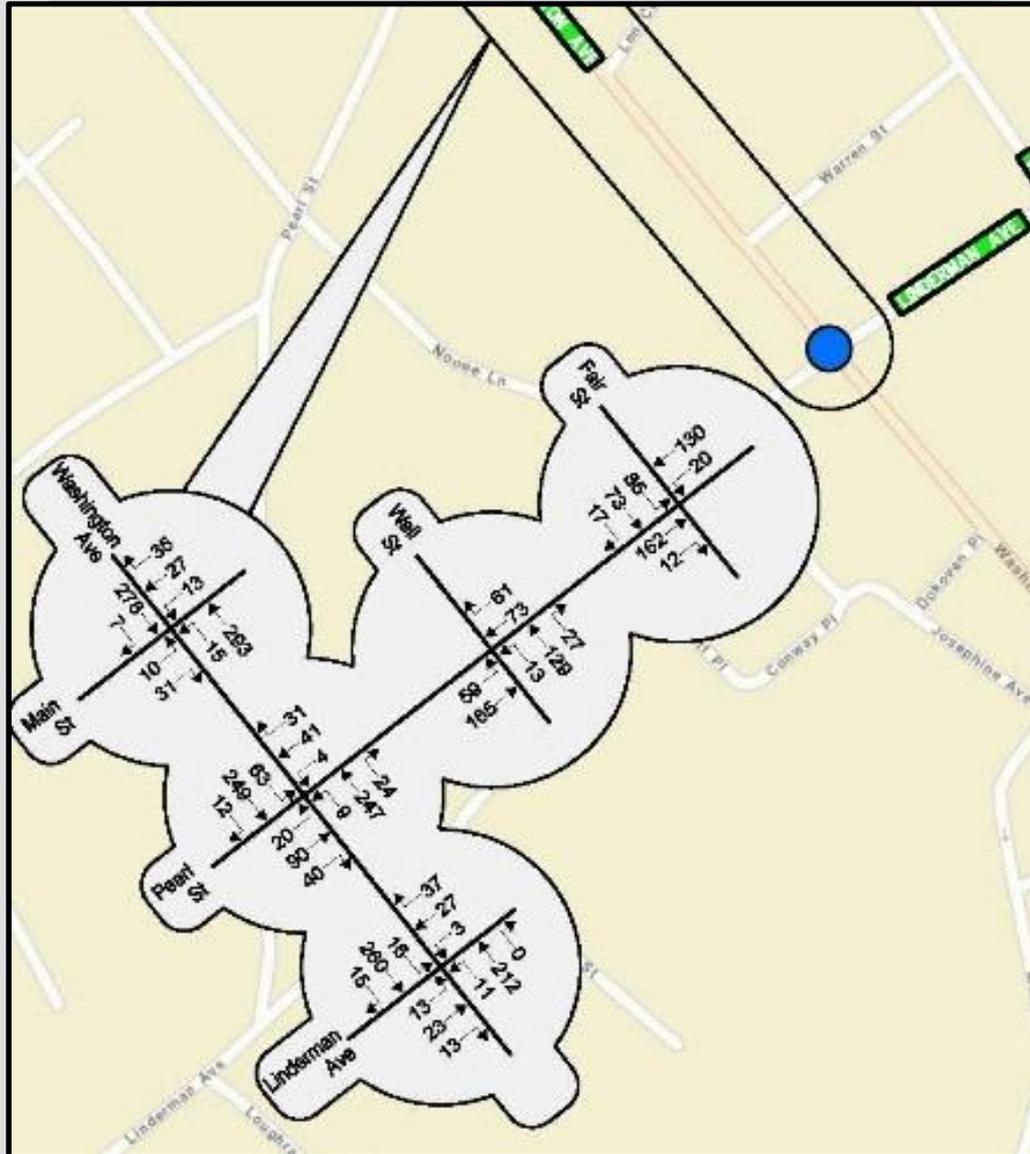
- Resources provided by FHWA indicates that the **removal of unwarranted traffic signals** at intersections with **high accident** rates located in urban areas has been shown to **decrease** all types of **accidents by 24 percent** based on an assessment of 199 intersections

Volume Development

- Peak commuter time periods
 - 7:30 to 8:30 a.m.
 - 4:30 to 5:30 p.m.
- Uptown Stockade Area Transportation Plan
 - Alternative that would change one-way orientation of some streets in the City of Kingston
 - Redistributed traffic at study intersections for potential modifications to local streets (4 of 8 intersections reviewed)



Volume Development



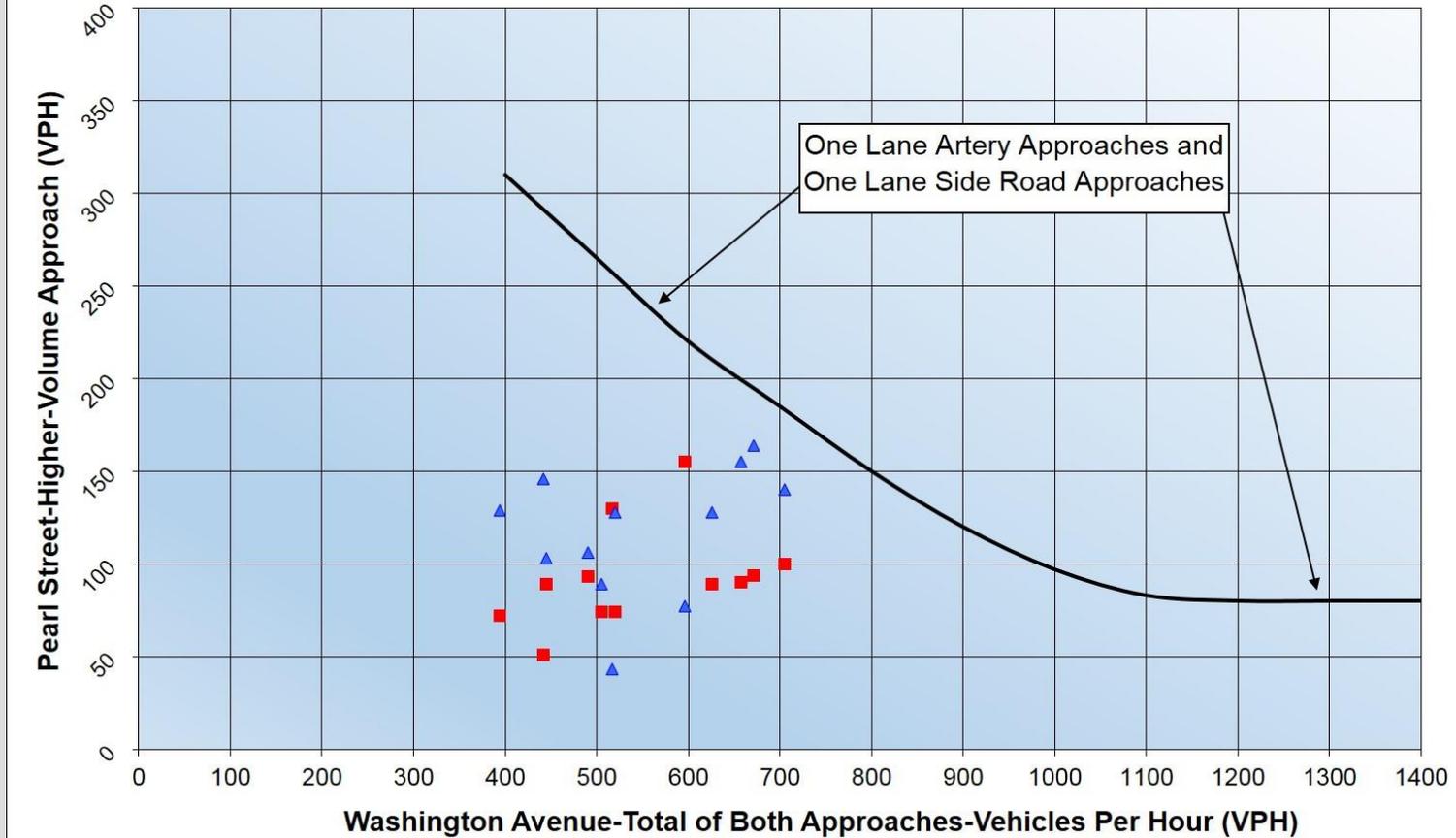
Traffic Signal Warrant Assessment

- A **warrant** is a condition that an intersection must meet to justify **traffic signal** installation. The National MUTCD specifies the minimum criteria that must be met in order for a traffic signal to be justified.
 - Warrant 1 – Eight-Hour Vehicular Volume
 - Warrant 2 – Four-Hour Vehicular Volume
 - Warrant 3 – Peak Hour
 - Warrant 4 – Pedestrian Volume
 - Warrant 5 – School Crossing
 - Warrant 6 – Coordinated Signal System
 - Warrant 7 – Crash Experience
 - Warrant 8 – Roadway System

Traffic Signal Warrant Assessment

Figure 4C-1
Four-Hour Vehicular Volume Warrant

Source: Federal MUTCD
Existing 2019 Traffic Volumes



Traffic Signal Warrant Assessment

Intersection	Signal Warrant Satisfied?								At Least One Warrant Met?
	#1	#2	#3	#4	#5	#6	#7	#8	
Washington Ave/Linderman Ave	No	No	No	No	No	No	No	No	No
Washington Ave/Pearl St	No	No	No	No	No	No	No	No	No
Washington Ave/Main St	No	No	No	No	No	No	No	No	No
Wall St/Pearl St	No	No	No	No	No	No	No	No	No
Fair St/Pearl St	No	No	No	No	No	No	No	No	No
Clinton Ave/Henry St	No	No	No	No	No	No	No	No	No
Clinton Ave/Franklin St	No	No	No	No	No	No	No	No	No
Clinton Ave/St. James St	No	No	No	No	No	No	No	No	No

Traffic Control Alternatives

- Pre-timed Traffic Signal Control – A pre-timed traffic signal without vehicle detection
- Two-Way Stop Control – Stop sign control on the minor street approaches.
- All-Way Stop Control – Stop signs on all approaches.

Intersection	Does Traffic Control Provide Adequate Operations?		
	Traffic Signal	Two-Way Stop	All Way Stop
Washington Ave/ Linderman Ave	Yes	Yes	Yes
Washington Ave/Pearl St	Yes	No	Yes
Washington Ave/Main St	Yes	Yes	Yes
Fair St/Pearl St	Yes	Yes	Yes
Wall St/Pearl St	Yes	Yes	Yes
Clinton Ave/Henry St	Yes	Yes	Yes
Clinton Ave/Franklin St	Yes	Yes	Yes
Clinton Ave/St. James St	Yes	Yes	Yes

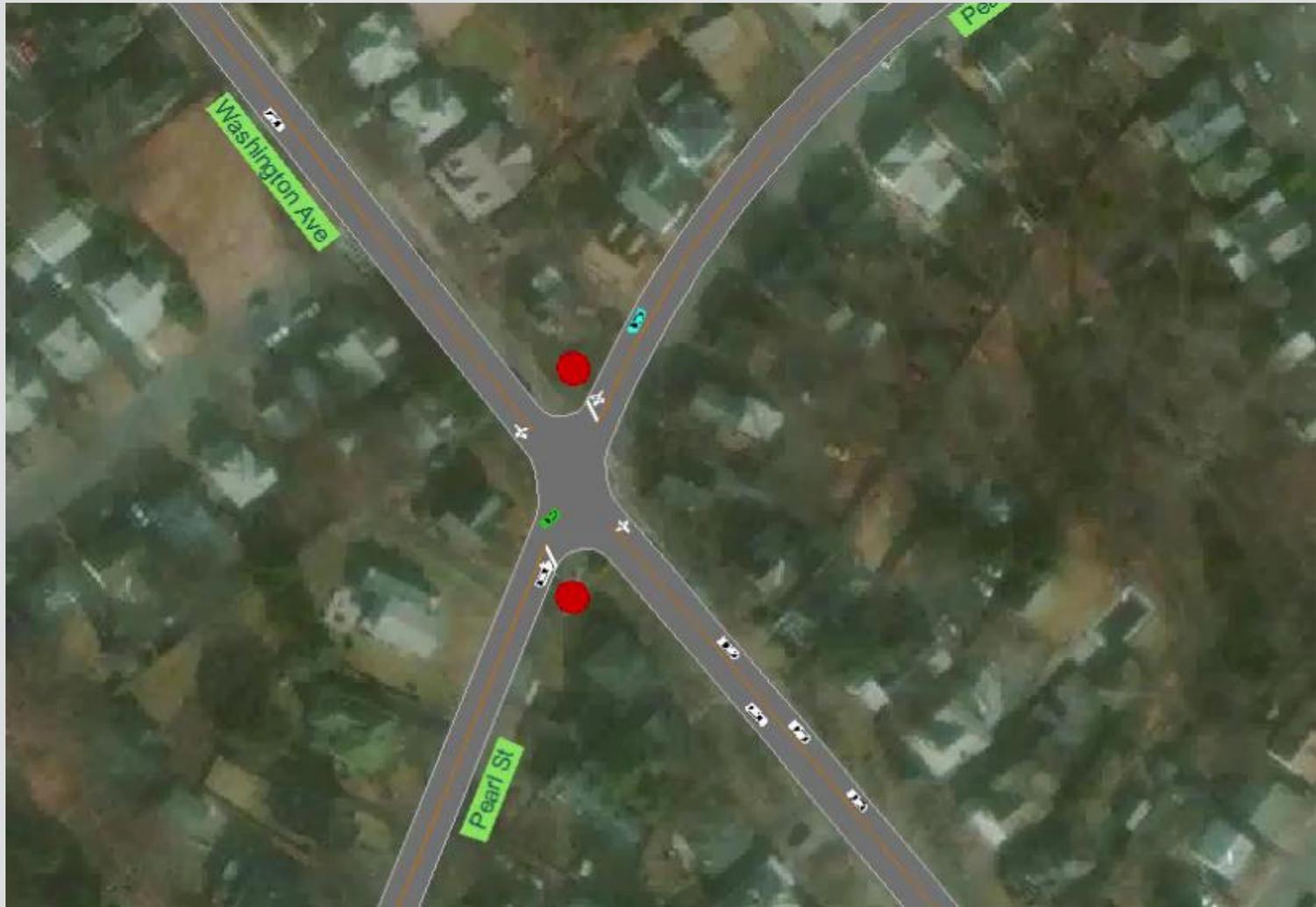
Traffic Control Alternatives - Modeling



Traffic Control Alternatives - Modeling



Traffic Control Alternatives - Modeling



Results

- The eight intersections do not meet any signal warrants.
- It is recommended that all eight traffic signals be replaced with all-way stop control due to sight distance limitations (vegetation, fencing, on-street parking, etc.)



Next Steps

- The removal of unwarranted traffic signals in the City of Kingston will:
 - Mitigate unnecessary intersection delay
 - Reduce operational and maintenance costs
 - Minimize traffic rerouting to alternate roadways
 - Minimize traffic control device disrespect
 - Reduce crash rates
 - Help facilitate Uptown Stockade Area Transportation Plan if progressed

Next Steps

- Incorporate public comments into the draft report
- Develop detailed signal removal procedure based on **National MUTCD guidelines**
 - Remove sight distance restrictions
 - Inform public of removal study
 - Flash or cover signal heads
 - Install appropriate traffic control
 - Remove the signal and monitor intersection



Next Steps

- Incorporate public comments into the draft report
- Develop detailed signal removal procedure based on **National MUTCD guidelines**
- If it is determined that one or more signals should remain, a detailed intersection optimization plan will be developed
 - Pedestrian clearance, yellow/red time, equipment upgrades, signing, curb modifications, etc.)
- Provide final report to the City of Kingston and UCTC – presentation if requested

QUESTIONS?

Contact Info

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City of Kingston

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<https://ulstercountyny.gov/transportation-council/active-studies/kingston-traffic-signal>

